Percussion Electric Conversion Hardware System, (PECHS)

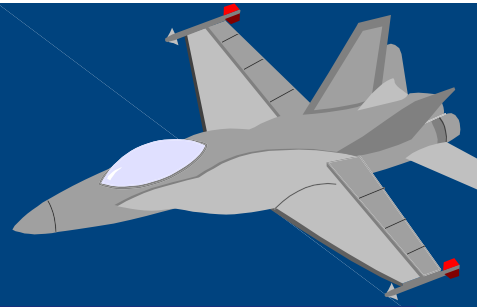
Presented by:

Bland Burchett, NAWCWD

Jim Talley, GDAS

GENERAL DYNAMICS
Armament Systems

Program Sponsor



- Naval Air Systems Command, PEO-T
  - ➤ PMA-242 Capt Russell

Address: Program Executive Officer
Tactical Aircraft Program
47123 Buse Rd. PMA-242
Patuxent River, Md 20670-1547

NAWC

NAVAL AIR WARFARE CENTER

GENERAL DYNAMICS
Armament Systems

Design Team

- **NAWCWD China Lake**
  - ➤Project Engineer: Mr. Bland Burchett
- **General Dynamics Armament Systems**
  - ➤Program Manager: Ms JoAnn Kramer
  - ➤Engineering Manager: Mr. Jim Talley
  - ➤Lead Engineer: Mr. Norm Gagnon
- **Sverdrup/Aegir**
  - ➤Design Consultant: Mr. Arthur Clayson

Project Goals

- Provide a HERO safe solution for the M61A1 Gun System
- Develop and document a Production TDP
- Leverage design concept for M61A2 & M197

Description

- The shipboard Electro-Magnetic Environment(EME) will initiate electrically primed 20mm ammunition
- Ammunition loading is conducted during shipboard shutdown of EME
  - ➤ Degrades shipboard situational awareness
- Convert M61A1 to fire percussion primed ammunition
- Make use of percussion primed 20mm ammunition; PGU-41

Design Guidelines

- Minimal modification to existing hardware
- Footprint within max dia. of gun housing
- Capable of firing both electric & percussion primed ammunition
- Low maintenance requirements
- No impact on gun performance
- Minimal impact on A/C integration

Current Status

- Percussion firing mechanism integrated and demonstrated with single-shot firings
- Pin fall timing has been quantified
- Firing pin energy has been quantified

GENERAL DYNAMICS
Armament Systems

Future Plans

- Analyze bolt locking mechanism
- Improve reliability of electrical contactor
- Fabricate parts for cycling tests
- Conduct 15,000-round endurance test
  - ➤PGU-27/B ammunition (electrically primed)
  - ➤PGU-41/B ammunition (percussion primed)